Vol. VI. No. 12. December 1900.

Journal of the Amateur Photographic Society of Madras.

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EDITORIAL NOTES.

OUR worst forebodings have fulfilled themselves. At the last General Meeting held on the 16th of November, the Committee recommended the winding up of the Society. This resolution was carried unanimously. The Society will be wound up after the 31st of this month. All the property of the Society will be sold. Such of the members of the Society as wish to join the Photographic Society of India can have their entrance fee paid out of the funds of the Society. They are requested to communicate their intention to the Honorary Secretary as early as possible. Out of the balance a set of prizes will be offered for competition at the next Fine Arts Exhibition, and the remainder will be given to the Friend-in-Need Society.

THIS number completes the sixth volume of our journal. The Amateur Photographic Society had a longer existence than the Journal. Looking through the old records, we find that the Society was started in the early part of the year 1888, and had, during the first year, nearly fifty members on its rolls. From the commencement, the Society does not appear to have been wanting in members or in funds. The difficulty of getting a sufficient attendance at the meetings which has at the present time proved fatal, confronted the active members of the Society even in those early days. A proposal was made in 1891 to wind up the Society. Needless to say, it survived that critical period. In 1895 the Society extended its influence and usefulness by starting a journal of its own. The Journal does not seem, at any period, to have depended entirely upon the energy of the members. That the Society and the Journal have, nevertheless, been doing very good work is quite clear from the records.

THAT the enthusiasm of the members was declining has been apparent for some time. At the Annual Meeting held in January last, it was decided to extend the Society's career for another year, as funds were good and members numerous. Although additional expense had to

be incurred in providing the Journal with more than the usual number of illustrations, it will be noticed that the price of the Journal remained the same. Nothing, however, succeeded in reviving the enthusiasm of the members, and it is with regret that we have to close our Society with the close of the century. We do not, for a moment, believe that the taste for photography is on the wane in Southern India; it must be that, owing to various causes, the members do not care, or are unable, to attend the meetings, and to help the Journal. And it is but natural that both the Society and the Journal should cease to exist when there is no demand for either. Our sincere thanks are due to all who have helped to make the Journal successful, and especially to Mrs. Leet Palk, our present Honorary Secretary, who has spared no pains to make the present volume not unworthy of its predecessors.

A VERY simple way of constructing an efficient flash lamp is described in the *Photo-Beacon*. The materials wanted are a clay pipe, a music-stand and an India-rubber tube and bulb, and a brass ring with a handle. Fasten the brass round the bowl of the pipe, the handle projecting downwards from the ring. The arrangement is shown in fig. 1. Remove the rack from

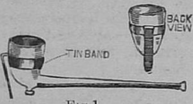


Fig 1.

the music-stand and fit the brass handle into the slot. Fix the rubber tube to the end of the pipe stem. Fasten a strip of lamp wick round the top of the bowl. The complete apparatus is shown in fig. 2. For use, soak the

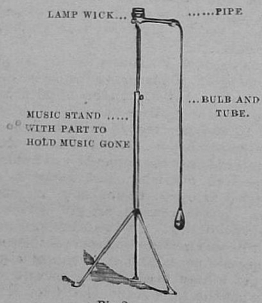


Fig 2.

wick with alcohol, and put the flash-powder in the bowl. When the flame over the bowl is at its best, squeeze the India-rubber bulb and you get the flash.

OUR HOME LETTER.

November 1900.

THE news this month that will interest readers abroad can be given in a sentence or two. I think I have mentioned in a previous communication that the next meeting of the Photographic Convention of the United Kingdom has been fixed for the town of Oxford. To that item of news I can now add the announcement that Sir William Herschel has consented to be President. His presence, combined with the exceptional attractions of Oxford as a centre, should make next year's Convention particularly enjoyable and interesting. It would not be amiss to add that the council will welcome any visitors from abroad, and that to become a member it is only necessary to send the modest sum of five shillings to the Secretary, Mr. F. A. Bridge, East Lodge, Dalston Lane, London.

The Ashton-under-Lyne Photographic Society have just held their Triennial Exhibition, and though this is an item which will not be likely to be of interest to those at a distance, the comments I am about to make upon it will, I think, be worth the attention of photographers in any part of the world. Although one of the larger local clubs, the Ashton men do not, like the majority of photographers' organizations in this country, go in for an exhibition once a year. They have found that by concentrating their energies upon a triennial event they are able to do themselves greater justice, and they receive a more generous support from the public. The local club which attempts to get up an exhibition once a year frequently over-reaches itself, the photographs collected cannot be so well chosen as when a greater interval is allowed, nor can the local men, so far as they are concerned, contribute effectively to a performance of frequent occurrence. As it is, the Ashton-under-Lyne Exhibition is one of the best provincial shows, and it draws the public from far and near. During the Exhibition which lasts a week, there are lectures every evening, also music and other attractions. In one large room the examples of pictorial photography, properly speaking, are gathered together, while in other rooms there are examples of Alpine photography, architectural photography, and a number of unframed prints. A third room is given up to the display of transparencies and stereoscopes, all effectively illuminated by the electric light. It was amusing to observe how great an interest was shown in the stereoscopes, two and sometimes even three persons waiting alongside for their turns. I have mentioned these points somewhat in detail, believing that they may afford suggestions to other photographic societies.

I propose now to give a few practical hints, and the first relates to the storing and indexing of negatives. Many different methods have been advocated for keeping one's negatives satisfactorily, so that not only may they be protected from wear and tear, but also that they should be easily referred to.

The cheapest plan is to put each one into an envelope attaching to it a number, and to put twelve negatives so enveloped back into the empty plate box from whence they came. The plate box may be then numbered outside 1 to 12, the next 13 to 24, and so on. These boxes may be simply placed in a row upon a shelf. Some kind of a rough book must be provided for pasting in proof prints. Stiff brown paper with a cover of cardboard answers well enough, and the prints need not be well finished nor prepared with particular care-all that is necessary, really, is that they should be properly identifiable. From each negative a print is pasted in this book by the four corners or attached by means of gummed paper, and underneath the number of the negative is conspicuously written together with the title, if it has one, though this latter item is not of great moment. To see what negatives you have at a glance, you simply turn over the pages of the file book, and if any are required you note their numbers and take them out from the boxes, returning them once more to their right places when done with.

I have been experimenting lately with a view of obtaining a greater variety of colour in lantern slides, and one practice which I can recommend is the staining of the slide or the cover glass, it does not matter which, by means of aniline dies, or other colouring matter. A faint tinge of aniline green effects a marvellous improvement to a sea picture or a woodland scene. A slight tinge of yellow emphasises a sunlight effect. Browns give an autumn impression, whilst other colours have their special applications. One must guard, however, against extremes, and if the colours are made too strong, then the result is far from pleasing to the artistic eye.

I observe, too, that the use of aniline dyes is recommended for staining carbon prints, and at a meeting of the London and Provincial Photographic Association only a few days ago, Mr. Earnest Human exhibited a number of carbon prints which had been originally black, but which he had, with varying success, dyed green, blue, brown and other colours. Some of these aniline dyes are of course fugitive, and care must be taken to select those of the greatest permanency; but if judiciously employed there can be no doubt that an excellent means is in this way provided of producing a most acceptable variation in tone of either slides or prints.

Some well educated and intelligent people seem still to be unacquainted with the position of photography as an art. Only the other day I read a record of a speech by a notable lady, wherein she observed that "if photographers would avoid that touching up required to make photographic pictures, they would be much more likely to arrive at good results." It is an absurd error to suppose that touching up is an essential operation in pictorial photography. In ninety-nine cases out of a hundred, the less touching up there is the better the result is likely to be. The falsities of the dry plate must be corrected, but operations, such as local reductions, reducing, intensifying, or compensations in the work of printing, are not to become confused with brush work put on afterwards, when the photograph becomes a hybrid production, and is neither good photography nor good painting. The old saying still holds good, "One half the world does not know what the other half is about."

PERCY LUND.

KODAIKANAL (ILLUSTRATED).

Our best thanks are due to Mr. C. Mitchie Smith for the beautiful illustrations which appear in this number. To him also we are indebted for the following account of Kodaikanal :—

Kodaikanal offers many attractions to the amateur photographer, as it does to every one who can appreciate a fine climate and beautiful scenery As regards climate there can be little doubt that Kodaikanal holds the first place amongst Indian summer resorts—a pre-eminence which is due partly to its situation nearly in the middle of the peninsula; and partly to the abundance of gravel in the soil which enables even the heaviest rainfall to drain away very quickly. The climate is remarkable even amongst hill climates for the comparatively small daily and annual range of temperature and for the extreme dryness of the air for several months of the year.

From the standpoint of the photographer the climate is an ideal one except as regards the difficulty of keeping his apparatus light-tight in the early part of the year. Last January, for instance, the air was frequently so dry that the relative humidity was below 10o/o. In the early morning it was no uncommon thing to find the wet bulb thermometer down near the freezing point, while the ordinary dry bulb was from 20° to 25° higher. Of course under such conditions, the photographer has to take great care that no cracks are opened in his camera or dark slides. At other seasons of the year, no serious trouble arises from this cause, while the low temperature makes the use of even a very small dark room a real pleasure to one who has endured the sweltering heat of a dark room even of the largest size in Madras.

But this same low temperature is at first apt to be a cause of trouble to one whose former experiences have been mainly on the plains, for chemical action takes place much more slowly, and if one uses the same strength of developer as he would do below, he will think that his plates have been under exposed. On the other hand, of course, the actinic strength of the light on clear days at this altitude is much greater than on the plains and the risk of serious over-exposure is considerable. I have always found it best to use a much shorter exposure here than I would do on the plains and to employ a somewhat stronger developer.

Of views, such as cannot fail to tempt the amateur, there is no lack. He can have his choice of water scenery, of rock scenery, of woodland, or of pure hill sides—or of these combined in endless variety. The great perfection attained by the tree fern in suitable situations tempts the photographer to expose many a plate on that most beautiful object, but I fear the proportion of failures is very large. The tree fern flourishes best under moderately heavy shade and it is by no means easy to judge the correct exposure. The best results are got with a long exposure on a rather dull day. On the other hand, in photographing the hills themselves—and some of them are most attractive subjects—one is almost certain at first to over-expose and so get a hard bleak-looking picture which gives no idea of what the hills really look like. Perhaps the two

objects most largely photographed here are the "Pillar Rocks" and the silver cascade, and it is perhaps not too much to say that not one photograph in a hundred does justice to either. Both are very difficult objects. You can easily get *parts* of both of them, but to get a general view of either, which will give a true idea of what it looks like, requires great skill both in selecting the stand-point and in developing the plate. Another favourite object is the hill Perumaul which, though a comparatively low hill, stands out so well from amongst its neighbours that it is often thought to be the highest hill on the range. Here again the photographer is apt to expect too much, for while to the unaided vision the hill seems often the dominating feature of the landscape, in the camera it sinks to its true dimensions. This is a good example of the well-known fact that a photographer, in virtue of its truthfulness, may be quite untrue to nature.

As to the best time to visit Kodaikanal there is some difference of opinion. The most common season is naturally the hot weather on the plains, but some of the finest weather here is both before and after that. The first three months of the year are usually splendid weather, and if we get a few summers the place is perhaps then at its best. The period of the N. E. Monsoon too has often spells of the most beautiful weather, though it must be admitted that at times when there is a storm off the coast, there are other places where one would rather be.

OUR CONTEMPORARIES.

THE PHOTOGRAM, *November*—
Photography in Natural Colours; Figure Studies; Technical Work of the Year; Enlarging Cloud Negatives.

DER AMATEUR PHOTOGRAPH, *November*—
Farbenphotographic; Stand-Entwicklung; Universal Projections-Apparat.

THE PHOTOGRAHIC TIMES, *November*—
The Pictorial Movement; Agfa. Intensifier; Testing the Speed of a Shutter.

JOURNAL OF THE PHOTOGRAPHIC SOCIETY OF INDIA, *November*—
The Valley of Cashmere; Doubtful Tendencies in Photography.

THE PHOTO-MINIATURE, *October*—
Photographing Children.

THE AMATEUR PHOTOGRAPHER, *November*—
Studies in Pictorial Composition; How to succeed as an Amateur Lanternist; Backyard Portraiture; Bromide-printing; Ozotype; Testing Shutter Speed; The Intensification and After-treatment of Carbon Prints; How to make a View-Meter; Quick Printing; Light and Shade; Photography by Moonlight, and Moonlight effects.

THE AUSTRALASIAN PHOTOGRAPHIC JOURNAL, *October*—
Cinematography; The Camera compared with the Structure of the Eye; Tone Values in Lantern Slides; Kachin.

THE PRACTICAL JUNIOR PHOTOGRAPHER, *November*.—
Nude Photography; The Artistic possibilities of Collotype; How to make a Silver Chloride Emulsion; Enlarging by Artificial Light.

WILSON'S PHOTOGRAPHIC MAGAZINE, *October*—
Lighting and the Hands in Portraiture; The Vignette; Making and Painting Backgrounds; Plain Surface Silver Paper; Potassium Permanganate; Gum-bichromate; Orthochromatic work.

THE AUSTRALIAN PHOTOGRAPHIC REVIEW, *October*—
Quick Drying and Mounting of Gelatine Prints; Halation; Familiar Troubles with P. O. P.; How to make Solutions.

Proceedings of the Society.

Committee Meeting.

PRESENT:—

MR. C. E. PHIPPS, *President (in the chair)*.
THE HON'BLE MR. G. STOKES, } *Vice-Presidents.*
LIEUT.-COLONEL VAN-GEYZEL, I.M.S. }
THE REV. A. MOFFAT.
MR. A. E. LAWSON, *Hony Treasurer.*
MRS. LEET PALK, *Hony. Secretary.*

The Committee as above met at 6 P. M. on the 16th November.

The minutes of the last meeting as printed in the Journal were taken as read.

Two letters were read—

1st, from Mr. C. Michie Smith, agreeing that the Society shall be dissolved, and proposing that the Society might offer to pay the entrance fee of any member wishing to join the Photographic Society of India, and that the balance of funds remaining be divided between the Fine Arts and Friend-in-Need Societies.

2nd letter, from the Second Prince of Parlakimedi, regretting the dissolution of the Society and the causes which led to it, and suggesting that the funds be utilized for providing a medal to be awarded each year to the best amateur photographer at the Fine Arts Exhibition.

The Committee resolved and recommended to the General Meeting.

1*st*.—That the Society be dissolved from the 31st December 1900 and all property be sold.

2*nd*.—That the Hony. Secretary shall ascertain if any, and how many, of the members wish to join the Photographic Society of India, assuming that the entrance fee is paid from the balance of the funds available.

3*rd*.—That the Photographic Society of India be then addressed as to their willingness to accept such members and upon what terms as to entrance fee.

4*th*.—That if any balance of money remain after this has been done, it be disposed of as proposed in Minute E of the last meeting.

Minute E.

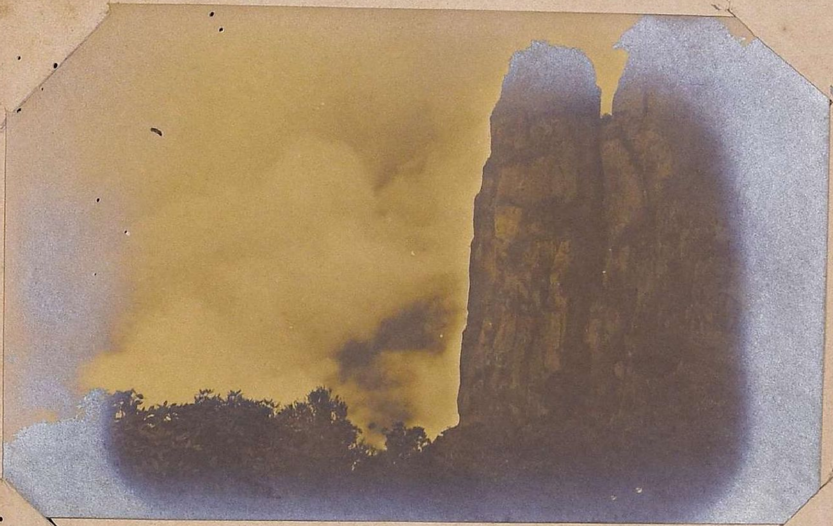
"That a set of prizes as was done last year shall be offered for competition at the next Exhibition of the Fine Arts Society in 1901, and that the balance remaining be handed over to the Friend-in-Need Society."

General Meeting assembled at 6-45 P. M.

The recommendations of the Committee were read, and on the Chairman moving that these be adopted and acted on, the resolution was accepted unanimously. A very hearty vote of thanks was passed to the office-bearers to the work and assistance they had done and given to the Society.

The attention of members is specially directed to the resolution of the last General Meeting, when it was directed that the balance of funds remaining at the end of the year should be utilized in payment of *the entrance fee* of any member desirous of joining the Photographic Society of India.

The entrance fee of any Mofussil member to the Photographic Society of India is Rs. 10. The annual subscription is also Rs. 10. Any member desirous of joining the Photographic Society of India are requested to send their names *without delay* to the Hony. Secretary.



Pillar Rocks, Kodaikanal. By MR. C. MITCHIE SMITH.

EXTRACTS.

Quick Drying and Mounting of Gelatine Prints.

The use of albumenised paper is, in very many studios, by no means yet abandoned, nothwithstanding the many advantages and attractions of gelatine papers, P. O. P., and bromide. Its superiority is claimed still by some workers, and it has physical properties of its own, quite apart from the artistic aspect of the case, which will always tell in its favour. Not the least of these is connected with the subject we are now dealing with. An albumenised print once finished and washed can, if necessary, be taken straight from the washing water dried, and mounted, and burnished if desired, ready for delivery, in less than five minutes; but under ordinary conditions this is quite impossible with a gelatine picture —print-out or developed. There is no fear of the surface melting if a little extra heat be applied to expedite the finishing, no sticking or injury to the surface if dried between blotting sheets or placed face down on the drying racks. In the ordinary course of business a professional photographer, if he be wise, naturally does his best to send out his orders quickly, but our remarks bear more particularly upon extraordinary work. A finished print, for example, is wanted for special reasons mounted and finished in a few minutes, or a batch of prints is required for the illustrated papers through a sudden demand for a particular subject. As a case in point we may give such an instance which came under our own notice. An important official dignitary suddenly died at eight o'clock one evening. The local photographer happened to have a negative of the place where he expired, but it was getting late when he heard of the occurrence, and his post closed at ten. But before that time he and an assistant between them printed, dried, and mounted some sixteen or seventeen prints, packed them for post, and had them dispatched to various papers for publication purposes before the clock struck ten. This was quick work, as any would say who remembers the time taken in the mere act of packing and addressing, but it would have been utterly impossible without some quick process of drying and mounting. It may here be said that, when important pictures are sent to the papers for reproduction, the mounting is by no means essential; but where it can possibly be done we strongly advise that it should be, for the most eagle-eyed illustration-editor will find more attention in a nicely mounted and finished picture than in a bare limp print.

Few things are more awkward to handle than a bromide print straight from the washing water; if it is dried between blotting-paper sheets, it will be inevitably spoiled; if it is not "bone dry," it will stick to the paper placed over it while rubbing down; if it is placed in front of the fire to dry, there is danger of its melting. All these difficulties, however, can be successfully battled with. The first point is rendering the print less tacky, and, indeed to make the surface insoluble. In the first case, if it be allowed to dry first and then be mounted, it is far more easily handled than if pasted and placed on the mount while still wet. But this would lose time; hence, for our purpose, it would be best to make the gelatine insoluble, and this can be readily done by means of an alum bath, but still better by one of formalin—one of two to five per cent. strength would be ample. The prints may then be handled without fear of sticking, and will bear with safety a considerable decree of heat. But the quickest and safest method is to immerse them in a dish of methylated spirit, press the spirit out by placing the prints in a heap and applying the squeegee, and repeating the process twice over, carefully separating them when placing in the fresh baths of spirit. At this stage, when all the water is eliminated, they will appear quite different from an ordinarily treated print; they will be semi-translucent, and when the picture shows through the paper, it may be considered that all the water is dissolved out by the spirit.

The next step is, without waiting for the spirit to evaporate, to paste them on the back in the usual way for dry mounting, and then to dry them and finish by dry mounting. The advantage of the dry mounting, is that as soon as the print is made to adhere to the card, it can be safely sent by post without further treatment, and with no risk of sticking to the wrapper or accompanying letter. It may be added that, in the quick making and dispatching we referred to, no time is allowed for washing. The only object of washing is to ensure permanence, and this, when producing the print merely for making a block from, is of no consequence whatever, and where every moment is of importance one or two changes of water is all that is necessary.

Finally, we would point out the desirability of first conspicuously marking such unwashed prints as "non-permanent" and, secondly, taking care that all blotting sheets, if used for drying are afterwards destroyed, for fear of contaminating future prints; that the paste brush is washed and the paste itself is rejected. These are trivial points, but such as, in the hurry of quick despatch, might readily be lost sight of to the material injury, of future prints were permanency was a consideration.—*British Journal of Photography.*

Some Notes on Development.

BY MR. T. THORNE BAKER, F. R. P. S.

If we watch a beginner develop his plates, we can learn a great deal more from his failures than his successes. A thing I most strongly advocate is the keeping of a small note-book in the dark-room, and making occasional notes of anything that strikes us as worth remembering. From a study of such notes every now and then we can often "put two and two together," and deduce some valuable knowledge.

Never use a one-solution developer for plates, as, with it one has no control whatever over the operations and perfect control is what we must aim at.

A developer that may be used for almost any brand of dry plate is made as follows:—

A

Hydroquinone	40 grs.
Potassium metabisulphite	30 „
Water	10 ozs.

B

Sodium sulphite	120 grs.
Caustic soda	60 „
Water	10 ozs.

C

Potassium bromide	1 oz.
Water	10 ozs.

Here we have three solutions, each of them fulfilling the duties of a developer's three components. A is the developing agent itself, in solution with a preservative. It is a reducing agent. B is the accelerator, by increasing the proportion of which relatively to A we increase the speed of development. C is the restrainer, which always seems to be much neglected by the beginner.

Now to explain the respective uses of A, B and C. If we are about to develop a plate which we think is correctly exposed, an ounce each of A and B should be taken, and mixed with 5 drops of C. The image ought to come up in 20—30 seconds. If, after about a minute and a half, nothing has appeared, half an ounce or so of the developer should be poured back into the measure, and another drachm or two of C added to it; this is then poured again into the dish, which must be rocked quickly for a few seconds. (Never pour B solution, or indeed any, straight out of the bottle into a dish containing a plate, as such procedure invariably causes stains where it first touches the plate). It is a good thing to dilute the developer with an equal bulk of water in the case of underexposed plates, for, although development is thus much protracted, greater contrast is obtained.

Sometimes an underexposed plate, when developed with a great excess of B solution over A, will "come up" to a certain point, and then come no further. As a rule, if a few drachms of A solution be now added, the plate will immediately develop in a proper manner.

An extra 10 drops of C solution should be used if we think a plate is overexposed, and if it be much so, the amount of B must be decreased.

If we are anxious to get a great deal of detail in a negative—a photograph of a wood, for instance, where the foliage is thick—we make the exposure with a small stop, say *f* 44, and develop with an ounce each of A and B, ten drops of C, and about half an ounce of water.

Always use fresh solution for each batch of plates; it is not advisable to use the same for more than four plates, and if it has been tinkered up to suit some improperly exposed negative, never use it a second time.

As regards developers for bromide papers, it is always well to keep them separate from plane developers. For bromide work the ferrous oxalate solution is undoubtedly the best, though few workers care to use it when there are so many other agents both cleaner and simpler to make up.

Amidol is perhaps the most popular at the present time. Owing to its bad keeping qualities in solution, however, it is best to make up the following:—

Sodium sulphite	200 grs.
Potassium bromide	2 ,,
Water	8 ozs.

This will keep indefinitely. For use take an ounce of sulphite solution and add to it 5 grs. dry amidol just before development.

It is best with such papers as "Velox" to dip the print into water for a few seconds, then quickly place it face downwards on the developer, immediately removing it again, and putting it in face upwards, then rocking the dish quickly so that it is at once evenly coated. The prints should be taken out when about three-quarters developed, as by the time they reach the fixing bath they will, if correctly exposed be quite ready.

Where speed is required, the solution may be warmed to about 75 Fahr when development will take place much more quickly than at normal temperature.

It is a mistake to print rapid bromide papers in day light, as proper contrast cannot be obtained, and the prints often have a greenish look when so treated. This greenish tint must not be confounded with that caused by using too much bromide in the developer.

For those who care to try the ferrous oxalate bath (and it would be well worth their while), I recommend the following formula:— A

Potassium oxalate	3 ozs.
Water	12 ozs.
Sulphuric acid	30 min.

B

Ferrous sulphate	1 oz.
Water	12 ozs.

Take equal parts of each, mixing just before use. —*The Practical Junior Photographer.*

A New Method of Making Prints.

The following new method of making prints is advocated in a foreign contemporary:—

Dissolve 15 grammes of potassium bichromate and 7 grammes of copper sulphate in 125 com. of water. This is the liquid sensitizer. It must be filtered and will keep indefinitely. The best paper to use is thick printing paper of good quality, and with glazed surface.

Pour a little of the solution into a glass and with a thick water-colour brush spread it very evenly over the paper. This operation of preparing the sensitized paper should be done in a dim light. It is a good plan to fix the paper on a drawing board by means of four pins, and holding it sloped, to wash on the solution as a water colour painter would wash in a sky, that is, beginning at the top and keeping the brush filled with liquid which must be spread by horizontal strokes to the bottom. This process is better than floating on the surface of the bath. The surplus which collects at the lower edge of the sheet must be soaked up with blotting paper, and the paper dried as quickly as possible a short distance from the fire, being carefully kept in the original position. All the success depends on the rapidity of the heating or drying. The paper, after being well dried, should be of a deep yellow. It must be exposed at once in a printing frame by a diffuse light. The printing will be much quicker than with silver paper. The image is correct when all the details are well out and the shadows are a deep chestnut, the whites being still of the original yellow of the paper. When the print is removed from the frame, it is very beautiful, and one wishes it could remain like that; unfortunately it is not fixed, and the fixing impairs its appearance. Fixing is done by simply soaking in clean water. The bichromate which has not been affected by the light dissolves and the paper becomes white; fixing takes about an hour. But if a little alum is added to the water ten minutes will suffice. The alum should be thoroughly dissolved, otherwise the smallest article will cause a spot.

The next process is to develop, and this is done by day-light. For this purpose a strong solution of pyrogallic acid, freshly prepared, is used. The details increase in intensity, the shadows improve in tone, and after a few minutes the image in perfect. The print is washed in running water for five minutes and is then finished.

This process, according to its author, is specially suitable for large negatives with vigorous effects. If the exposure has been correct, the image is beautiful and very artistic. For cheapness and speed this new process would beat all rivals. Paper thus sensitized does not keep; but the more quickly the operations are carried through the better are the results.—*The Practical Junior Photographer.*

Enlarging Cloud Negatives.

By Rev. F. C. Lambert, M.A.

[How to take cloud negatives was fully described in an illustrated article by Mr. Lambert in the September (1900) issued.]

Enlarged cloud negatives are now almost a general necessity in these days of small cameras. Hence arise the questions:—Is it better to enlarge the cloud direct on to a bromide paper? or in the case of platinum, carbon, etc.,

what is the best process for the intermediate positive? what should its size be? and so on.

On the whole the enlarged sky negative is preferable to enlarging on to paper, even where that is open to us. So our next question is the size of, and the process for, making the intermediate positive, the former, to some extent, depending on the latter.

If we set up our original negative and illuminate it as a transparency, then by the aid of the camera and a dozen plates (of moderate rapidity, as above mentioned) we may make it of any size, smaller or larger than the original. And as in the original negative, so with our positive, we shall aim at delicacy and gradation rather than contrast

Contact processes of course limit us to the same size as the original. Of these we must mention :—paper such as "Novitas," bichromated films, and the carbon process.

Taking the last first, it must here be assumed that the reader is familiar with the process, so all we do is to remind him to use transparency tissue, and avoid excessive contrast by sensitising in a strong bichromate bath and giving a full but not excessive exposure. It has been suggested that the carbon tissue should be laid down either on thin pot opal or fine ground glass. But the present writer finds no gain by either of these methods, and it materially increases the cost. The glass of waste negatives when carefully clean may be used, and the positive illuminated as a transparency by light, reflected from a *large* sheet of white card not too near it.

Stripping paper is again a very convenient means of making contact positive transparencies. Paper of this kind is now well known, so one need only refer to one or two working details. The contact print is printed somewhat fully—*i. e.*, rather darker than one would print for albumen-silver paper. It is first softened by steeping in water, and then goes straight into a hypo fixing bath of, say, 10 per cent. strength without any attempt at gold toning. After 10 or 15 minutes in hypo it is then well washed, for an hour at least, in gently running water. An old negative is taken on the gelatine film thoroughly cleared away. The print is now immersed in a deep dish of warm water at the bottom of which lies the glass of the stripped negative. The water is warmed by adding hot water gradually, when presently the picture film begins to part from its support. A few deft touches cause it to strip from its own supporting paper on to the clean glass, when it is at once removed, creases smoothed out and bubbles got rid off, and then set up on edge to dry. If the picture film is slipped direct from the paper on to the glass, it requires no cementing substratum. Of course this positive is now of a yellowish red, and due allowance in printing must be made for this nonactinic color. Excessive printing gives unnatural contrasts.

Lastly, we come to a process not quite so generally known. A gelatine film on celluloid is used. This may be one which has been light struck but not developed. It is immersed for about three minutes in a 3 per cent. solution of potassium bichromate, after the manner of sensitising carbon tissue, and then dried in the dark. In a printing frame we put the original negative and then this bichromate film with its *back*, *i.e.*, bare celluloid side, in contact with the film of the negative. Exposure for a few minutes to daylight is given. The film is now immersed in warm water (just like a carbon transfer print) and the unhardened soluble parts washed away. This done the film is exposed to day or lamp light for a few seconds and then the recently white positive converted into a dark one by the aid of any convenient dry plate developer, *e. g.* ortol, rodinal, etc. This is then passed through a fixing bath, washed and dried.

One need hardly add that in making the final (enlarged) negative from the positive we have to aim at the same thin, soft, delicate negative as before. In fact, one may say that the larger the cloud negative is, the less contrasty should it be. This is generally true of all negatives, but markedly so in the case of sky and cloud subjects.—*The Photogram.*

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*Lantern-slide making for beginners.**

By Primrose Hill.

(101) *Brushes.*—These though few in number should be of good quality. Those known as round sable are the best. We require one very small, one medium, and one fairly large. The hair of the largest may be three-quarters of an inch long. After use they must always be washed free of colour in a little clean turpentine. Then in a little soap and warm water, the hairs carefully rounded and brought to a fine point, and allowed to dry. With reasonable care they will last for years.

(102) *Dabbers.*—The best dabber is the end of the finger. If the skin is rough it may be smoothed by rubbing on a piece of flat pumice stone. Most workers use the pad of the third finger. It is as well to be provided with dabbers of kid. These we can make for ourselves. A bit of cotton wool as big as a small nut is tied up in a piece of clean kid or chamois leather, and the thing is ready for use.

(103) *Media.*—The following are all recommended, viz., turpentine, copal varnish, mastic varnish, Japanese gold size, Robertson's medium meglip. Each and all have their good points. Gold size and mastic varnish are good driers, and are therefore especially useful with the madders and lakes, which are slow drying pigments. For general work Robertson's medium, ordinary meglip are good, so also is a mixture of equal parts of turpentine and copal varnish

(104) *Palette.*—We can, if need be, use the back of a dinner plate, but it is more convenient to have a plain white tile or a piece of stout opal glass.

A *small* palette knife is a convenience, but not a necessity. We can use our large brush, or better still, a small cheap flat hog hair brush for mixing our colours on the palette. A stump is also a useful tool, and easily made by tying a bit of kid or chamois leather over the end of a brush handle cut to a narrow flat point—like a chisel. With this tool we can remove patches of colour.

(105) *Applying the colour.*—One need hardly say anything to those accustomed to the use of a brush, beyond the hint that each patch of colour must be applied in one operation and one touch. The final colour must be applied at once, and not disturbed by any "niggling" with the brush.

"*Dabbing.*"—By this is meant the spreading of an even or graduated tint over a comparatively large surface, such as a sky. This cannot well be done by any brush application only. The colour is quickly applied by a brush in the first instance, and as evenly as quickness will allow. Then comes the dabbing with the finger tip or dapper, with quick even light touches until the tint is adjusted to the required degree of evenness. The oil painter will here see that the dabber roughly corresponds to the ordinary sable softener. As in water colour we commence with the lighter colour and work down the scale.

(106) *Colouring by dye stains.* (Roster's process).—This is a somewhat different method, as here the colour-

* [This concludes the series—Ed.]

ing material is applied as an aqueous solution to the gelatine film, and is calculated to penetrate and stain it.

First as to the dyes. The following list has been compiled from various sources:

Blue: Indigo carmine. *Yellow*: Tropæolin O. *Green*: Malachite. *Red*: Eosin. *Orange*: Aniline orange. *Brown*: Bismark brown, vesuvin. The above colours form a palette and may be combined in various ways.

For sky, indigo carmine. For foliage, tropæolin and carmine, or malachite may be used very sparingly. Flesh tints, eosin, with or without tropæolin. Fiery red, eosin and aniline orange. Warm brown, Bismark brown and tropæolin. Cool brown, Bismark and indigo carmine. The slide is first well soaked in cold water, and then blotted surface dry. The colours are then applied in washes, and the excess blotted off to prevent spreading.

In sky tinting we begin at the horizon and allow the colours to flow towards the zenith, the slide being inverted, of course. In this way one tint is melted or graduated into another.

(107) *Albumen method with stains.*—In this case a solution of albumen is used as a medium. The medium is prepared as follows: The white of an egg is beaten up with five or six ounces of cold water, to which has been previously added a small saltspoonful of table salt. After well beating and frothing the vessel is set aside for the liquid to settle, and the clear part is decanted for use. Another method is to soak fifty or sixty grains of dried albumen in cold water, five or six ounces, for twenty-four hours, and then beat up to a froth as before.

Dyes.—In this case our palette contains only three colours, these are saturated solutions (in water) of (*a*) eosin (red); (*b*) four parts picric acid, plus one part acid green (green-yellow); (*c*) methylene blue or Bayer's blue.

The slide is saturated with the albumen solution by brushing, and any excess blotted off, and then the three colours, either singly or in combination, applied with a brush, and any excess blotted off. If not deep enough in tint, a second or third application may be made.

XVIII.—PRINTING-IN CLOUDS.

(108) Many a technically excellent slide is a pictorial failure because it lacks an appropriate bit of cloud or sky. It is a curious thing that among our many makers of really good slides, so few, comparatively, give a thought to getting that one finishing touch, a good and appropriate, *i. e.*, harmonious sky. No one nowadays thinks of sending to an exhibition a paper print of a "bald-headed view," as a cloudless landscape is sometimes called; but this monstrosity is far too common in the matter of lantern slides.

(109) *The One Plate Method.*—In the present chapter we propose showing the beginner how clouds may be added to his foreground. And for simplicity's sake, we will begin by supposing that we are making our slides by *contact*, from quarter-plate negatives, using ordinary quarter-plate pressure frames, and gas light as our illuminant. Our first step, of course, is to select our two negatives, one giving us the foreground, *i. e.*, the land negative, and the other the cloud and sky negative. It will be enough to point out that they must harmonise with each other, both in general character and direction of lighting.

The accompanying fig., A, shows us the chosen landscape—a quiet, simple subject, suggestive of a calm evening effect.

Our next step is to take a bit of quarter-plate P.O.P. (or albumen silver paper) and cut it exactly $3\frac{1}{4}$ by $3\frac{1}{4}$ inches. This we place under the negative of A, in position exactly corresponding to the portion of the slide to be used. With a finely-pointed hard pencil we mark the position of the corners of the paper on the film of the negative by dots. These are for future reference. We now put out our frame to print. And here we may say a spotted, or stained, or stale bit of paper may be used, provided, of course, that it is quite dry, so as not to stick to our negative. We leave the frame out until we can distinctly see the sky line (running along the tops of the trees, etc.) clearly printed.

Now withdraw the frame, take out the paper, and with a pair of small-blade, sharp scissors cut along this skyline, dividing the paper into a land part and a sky part. Then lay these two pieces of paper on the window-sill, and let them thoroughly darken. We now obtain two pieces of black paper, such as shown at B, the land part, and C, the sky portion. These we shall use as masks.

We now take the paper C and apply a few touches of gum or paste to its white side (to that region indicated by the broken outline), and then apply this pasted side to the *glass* side of our land negative A, and arrange it so that this paper mask just covers up the sky part of the land negative. The cut sky line edge (which has not been pasted) will curl up away from the glass, and this will help to soften the printing outline. But the two original corners should correspond exactly in position with two of the dots on the film.

Next we take the mask B and paste its white side (corresponding to the broken line part), and then stick it on the glass side of our cloud negative. Then we make two dots on the film side, exactly corresponding in position with the two uncut corners of the mask. A good deal depends on the register corner marks, and therefore they should be accurately and clearly made.

We now return to our dark room, with our two negatives in two separate printing frames. Taking an unexposed plate from the store box our first act always is to stick a tiny bit of gum paper on the back of the middle of one side. Make it your rule to always mark the *centre of the top* of your picture, or the *right hand top corner*. This will probably save you from printing the land and cloud parts one on top of the other, and so wasting time and trouble. Now lay your plate film to film with the land negative, and see that the corners of the plate agree exactly with the two film dots. Close the slide and make the exposure. Now, as you want to soften the sky line, you can do this by "wobbling" the printing frame during the exposure. The cut edge of the paper has curled away from the glass, and this will help to give varying shadows. Or you can, if you prefer it, obtain a very similar effect by covering the front of the printing frame during exposure with a sheet of tissue paper, or ground glass. Of course, these diffusers must be an inch or two away from the negative. But this wobbling dodge is quickest, and a few trials will show one how far to go in tilting the plate at various angles. Turn the gas down and transfer the plate from one printing frame to the other, not forgetting that our second exposure is for the clouds, so that this part of the plate, marked by the gum paper, has now to be exposed. But as the film is thin, and there will (or may) be some light reflected from this bit of gum paper—it is always well to take it off just before closing the slide, with a final peep to see that our plate corners again correspond with the two dots on the film of the cloud negative. The cloud part is now exposed, with either the wobbling or tissue paper softening arrangement.

Hills near Kodaikanal. By MR. C. MITCHIE SMITH.

After the two exposures development should give us the sky and land harmoniously blended. At first the beginner is very apt to over-print the sky part. The sky negative is probably rather thin, and he is tempted to let everyone see that his slides are different from the common lot. But let him remember that the sky and land parts must not compete for attention, one or other of them must have chief place.

Thus far we have supposed that the land and clouds are to be printed on one and the same lantern plate.

(110) *The Cover Glass or Two Plate Method.*—This is very similar to what has been described, except that we use two plates instead of one plate and a clear cover glass. We use the second plate for the sky, and it serves the purpose also of a cover glass. All the operations are the same, with this one essential point of difference. Our mask B, which covers up part of the cloud negative, must be reversed, *i. e.*, from left to right. That is, the *black* side is pasted down to the glass side of the cloud negative. Another covenient way is to paste the white side to a piece of clear glass—an old quarter-plate negative, from which every trace of gelatine film has been thoroughly removed —and then put this in the printing frame first and the sky negative on it, *i.e.*, the mask between the two glasses. In this case we shall have to use a ground glass or tissue diffuser. One need hardly say that as this method reverses the sky from left to right we could not use the same sky negative for the two methods indifferently. In fig. D we show the result of the cover glass method of cloud printing, and in E we see the effect of putting together, film to film, the two slides, A and D.

(111) This (cover glass) method has one or two points in its favour which should make it especially welcome to amateurs. But first let us mention the one only objection, *viz.*, that we use two plates where (with perfect skill) a plate and a cover glass *ought* to suffice. However, this objection, on the grounds of economy, does not, as a rule, find support by actual experience. The first described (the one plate) method means that *both* exposures must be correct, *and* that the junction must be quite satisfactory. In practice most of us find that we do not get half our trials fulfilling these somewhat stringent conditions. Hence fully half our plates are lost.

But by the cover glass method failure to get a perfect sky part does not necessitate throwing away a satisfactory land part on another piece of glass. Then again, if the sky part is say a trifle over-done we can slightly reduce the whole of it, or, if the junction is not quite satisfactory, we can by local reduction perhaps mend matters. For instance, suppose that in D the sky part goes a little too far over the distant trees and land. We wet the whole plate freely with water, and keep the top part well tilted up. Then applying with a soft brush a suitable reducer we wash it off by passing the top edge of the plate under the tap. This prevents our reducer getting on to parts where it is not wanted. (The formulæ given in paragraphs 62 and 63 are suitable). Another advantage of the two plate system is that with the same foreground we can try the effect of several different skies before finally binding the two plates together.

(112) *Through the Camera Method.*—In Chapter VIII. we have given one or two methods of making slides from negatives larger than quarter-plate by means of lens and camera. In combining land and sky negatives the procedure is very similar but not quite the same as that already given. In this case we lay a piece of semi-transparent orange paper on the negative and with a pencil trace the sky line. Then cut this out with a wavy or serrated outline. These two portions are our masks. Now these are to be held an inch or two away from the respective negatives, and kept in gentle motion during exposure, to give a vignetted edge. For this purpose it will be found a good plan to pin these masks to a piece of stout brown paper, cut to the same shape, with a free margin of half an inch or so along the sky line; that is to say, the brown paper should be an inch or more larger all the way round than the coloured mask, *except* along the sky line, and here the coloured paper should project about half an inch beyond the brown paper. If we are using the one plate method, the two masks are both held the right way round. But if we are using the two plate (cover glass) method, the sky negative mask has to be reversed right and left. The masks should be held on the outer side of the negative, that is, further away than the lens is from the negative. And they should be kept in gentle motion all the time of the exposure.

XIX.—DIAGRAM SLIDES; COPYING MAPS, ETC. TINTERS; RETOUCHING; COPYING SLIDES; BACKING.

(113) The photographer, whether he be a lantern slide maker or not, often has occasion to illustrate a lecture by means of a map or diagram on the screen. The hon. sec. wishes to emphasise some club appointment, and the hon. treasurer ventures to remind members that subscriptions *may* be paid in advance, etc. These things can be easily done by a rapidly prepared slide, and every one in the room gets the information at one and the same time. In this chapter we set forth various methods of making these diagram slides, as they are generally called, so that each reader may select those methods which best meet his own needs. For convenience we may group the methods into two classes. First, those which show as black (or coloured) lines on a *light ground*, and second, those that show as white (or coloured) lines on a *dark ground*.

(*a*) Rub a piece of clear glass with a drop or two of retouching medium. Obtain a very thin and even coating, free from streaks. Allow to dry. Then draw or write with Indian ink.

(*b*) Fix, wash and dry an unexposed lantern plate. Then draw the diagram with Indian ink.

(*c*) With a finely pointed and rather hard blacklead pencil draw your diagram on finely ground glass. Then coat the ground side with cold crystal varnish, or with a solution of gum dammar in benzole, or warm the plate and coat with ordinary negative varnish.

(*d*) Prepare the following solution for matting ordinary glass, according to any one of the four following formulæ:

Sandarac	... 1 part ...	10 grains ...	2 grms ...	90 grs.
Mastic	... 1 „ ...	10 „ ...	2 „ ...	20 „
Ether (sulphuric)	50 parts ...	1 ounce ...	100 c. c. ...	2 oz.
Benzole	.. 10 „ ...	100 minims...	20 „ ...	$\frac{1}{2}$-$1\frac{1}{2}$ oz.

Note that in the fourth column, or formula, the quantity of benzole may vary from $\frac{1}{2}$ to $1\frac{1}{2}$ ounces. The more benzole used the coarser the "grain" of the varnish.

A piece of plain glass is coated with this matt varnish. The drawing made with a pencil, and transparency restored by again coating with any quick drying varnish; and the following may be taken as a fairly typical example:

Sandarac	... .. 30 grains	... 3 parts
Mastic	... ... 30 „	... 3 „
Ether	... ... 2 ounces	... 100 „

If a coloured ground is required, this can be obtained by selecting one of the aniline colours, soluble in ether, and adding it to either the first or second coating as above.

(*e*) Coloured clear ground may be prepared as follows: An old, but carefully cleaned, celluloid film is cut up into small pieces. From 5 to 10 grains of celluloid is then dissolved in an ounce of methylated spirit. This is then coloured by adding a suitable aniline dye, which is soluble in alcohol. A clear glass plate is coated, and when dry can be drawn upon with Indian ink.

(*f*) An ordinary negative or lantern plate is exposed to light. The design is then painted on the film with a finely pointed brush, dipped in any strong developer. Local action takes place, and when the parts touched are sufficiently developed the plate is placed direct in the fixing bath.

(*g*) If with a blunt point of a bone knitting-needle, agate burnisher, etc., writing is made in the dark on the film of an unexposed plate. This writing is developed out, leaving the lines dark on undeveloped, clear ground. The plate is then fixed and washed in the usual way.

(114) We now pass to methods of showing a design on a dark ground.

(*h*) A piece of clear glass is rubbed with a bit of bees' wax, to give a slight even coating. It is then held in any smoky flame, such as that from buring camphor, a candle, or paraffin lamp turned low down, care being taken to keep the glass in constant motion, and not too near the hot flame, so as to minimise the chance of fracture. The drawing or writing is then made with the point of a pin. A mask of thin card is cut, and the thickness of this is sufficient to prevent the cover glass touching the sooty surface. The object of waxing the glass is to make the soot adhere more firmly.

(*j*) Any light-struck plate is developed out to maximum density, fixed, and washed and dried. The clear lines are obtained by scratching through the gelatine with a blunt pin point, or other convenient instrument, such as a knitting or crochet-needle, point of a compass leg, marking awl, etc.

These clear lines may, if wished, be turned into coloured lines, by coating with coloured ink and gum water, or aniline colours, with a little gelatine, or transparent oil colours and varnish.

(*k*) A piece of clear glass is coated with bitumen, dissolved in benzole, or black varnish, and clear lines obtained by scratching off the varnish.

(*l*) Make a 20 or 30 grains per ounce solution of gelatine in warm water; then add gas-black, or any other opaque pigment, to form a thick cream. Coat clear glass, and when dry, obtain clear lines by scratching. We believe that plates, coated with some opaque material, may be obtained all ready for drawing or scratching through the dealers, although we are not at the moment able to give any definite information on this point.

(115) *Copying Maps, Plans, and Diagrams.*—This only calls for one of two notes of a simple character. If we require a simple tracing from a disgram not larger than lantern plate size, we can lay down our glass on the diagram and trace the outline with pen of brush. Methods A, B, E, or C are suitable.

But if we need to reduce a large map or enlarge a small bit of detail we must use a lens. First, make a negative and then get a slide by contact. In copying of this kind it is important to have the lens exactly opposite the centre of the part to be copied, and the map and focussing screen must be in parallel planes. The best way is to pin it to an evenly and well lighted wall. Set up the camera with lens opposite the centre, get it the required size on the focussing screen, and focus as sharp all over as you can. Then, with plumb line and level set the camera back, level and vertical, and refocus. Give a full but not excessive exposure. Develop your negative with hydroquinone, containing a fair proportion of bromide, and aim at getting sharp, clear lines, with a fully developed ground.

(116) *Tinted Cover Glasses, or Tinters.*—We have in a previous chapter mentioned how various colour stains may be produced. We may supplement those remarks by one or two additional hints.

(*a*) Coloured glasses may be bought, but these, as a rule, are far too crude in colour.

(*b*) For generally subduing a slide the cover glass may be coated with a very fine grain matt varnish, *i. e.*, one which contains a small proportion of benzole.

(*c*) Unexposed plates are well fixed and washed, and then the clear, gelatine colour stained by longer or shorter time of immersion in some one of the following dye baths.

Red: Congo red or fuchsin, eosin or red coraline. *Orange*: Aurantia, chrysoidine. *Yellow*: Uranine, Manchester yellow, tropæolin. *Green*: Malachite green, acid green. *Blue*: Gentian blue, Hoffman's blue, indigo carmine. *Violet*: Methyl violet. *Brown*: Bismark brown.

The strength will vary according to requirements, but as a rough guide, 1 part dye to 100 or 200 parts water will be about right. Of the methyl violet, which is a powerful colour, I part dye to 400 or 500 water will probably be strong enough. If the dye does not dissolve sufficiently freely in water, you may try the addition of a few drops of acetic acid; or the dye may be dissolved in alcohol and then diluted with water.

(117) *Retouching Slides.*—The best advice we can give on this point is—Don't. If any pinholes, spots, etc., are to be corrected, let all be done on the negative. It is all but impossible to make a satisfactory job of retouching a slide.

(118) *Copying Lantern Slides.*—By far the best way of doing this is to set up the slide in a $3\frac{1}{4}$ in. square opaque frame of wood or cardboard, and through the camera make a fresh negative, and then from this a slide, either by contact or with the lens. Unless the cover glass is cracked, or has air bubbles, there is nothing to be gained by removing it from the slide to be copied. The negative should be made on a backed plate.

(119) *Backing.*—Nothing is ever lost and often much is gained by backing your lantern slides previous to exposure. Any of the usual backing mixtures may be used. Many formulæ have been given. But the following are offered as selections:

(*a*) Indian ink in half spirit half water.

(*b*) Caramel in equal parts of water and methylated spirit.

(*c*) Gum mucilage, made into a thick cream with burnt sienna.

XX.—TABLES USEFUL IN LANTERN-SLIDE MAKING.

(120) In the present chapter we bring together several tables likely to be of use to the lantern slide maker. And to prevent misapprehension, it may here be said that we purposely omit all reference to the optics of the lantern.

The beginner may perhaps be disposed to throw this chapter aside, because just at the moment he may not want to use any of these tables. Then, when he does want to know how to compare different brands of plates, differ-

ent lenses, different times of exposure, and so on, he will have to be at the trouble of working these things out for himself.

Therefore, we here advise him first to get into his mind what these tables are for, then to put a duplicate copy in his "*omnium gatherum*" book of notes, cuttings, scraps, and reference matters; so that when he does want them, they will be at hand for ready reference.

When you are at work in your dark-room, you do not want to be bothered with laws about inverse squares, and so on. These tables will at a glance tell you what you want to know.

TABLE I.

A TABLE showing the suggested exposures for contact printing from an "average density* (pyro) negative," with a No. 5 Bray's gas burner.

Cadett (blue) ...	$2\frac{1}{2}$	seconds	at 1 ft. from gas.
,, (red)	5	,,	,, ,, ,,
Imperial special ...	5	,,	,, ,, ,,
Baget rapid	5	,,	,, ,, ,,
Thomas	7	,,	,, ,, ,,
Ilford special	9	,,	,, ,, ,,
Imperial slow ...	10	,,	,, ,, ,,
Barnet	10	,,	,, ,, ,,
Sandell	10	,,	,, ,, ,,
Cowan (chlora-bromide)	12	,,	,, ,, ,,
Mawson	15	,,	,, ,, ,,
Paget slow	30	,,	,, ,, ,,
Ilford Alpha	12	minutes	,, ,, ,,

The above table has to some extent been collated from the printed instructions issued with some of the plates. The present writer, however, finds the above exposures may be cut down to about half time in several instances.

TABLE II.

RELATIVE OR EQUIVALENT TIMES OF EXPOSURE (IN SECONDS). and Distance (in feet) from illuminant.

1	$1\frac{1}{2}$	2	3	4	5	6
1	$2\frac{1}{4}$	4	9	16	25	36
2	$4\frac{1}{2}$	8	18	32	50	1 m. 12
3	$6\frac{3}{4}$	12	27	48	1 m. 15	1 m. 48
4	9	16	36	1 m. 4	1 m. 40	2 m. 24
5	$11\frac{1}{4}$	20	45	1 m. 20	2 m. 5	3 m. 0
10	$22\frac{1}{2}$	40	1 m. 30	2 m. 40	4 m. 10	6 0
20	45	1 m. 20	3 m. 0	5 m. 20	8 m. 20	12 m. 0

Table II shows us at a glance the relative exposures for different distances. The top row of figures give the distance from printing-frame to gas, lamp, magnesium, etc. The horizontal rows below give the equivalent times for these distances. Thus 4 seconds at 2 ft. is equivalent to 25 seconds at 5 ft., or 1 second at 1 ft., or $2\frac{1}{4}$ at 88 inches.

If the exact numbers are not given in the table, one can generally get sufficiently near by combining two rows of figures. For example, we want to know what exposure at 5 ft. is equivalent to 40 seconds at 4 ft. In the 4 ft. column we find 32 and 48. Now 40 is just midway between these, so if we find the half-way value between the corresponding values in the 5 ft. column, viz., 50 sec., and 1 min. 15 sec., we get (practically) 1 min.

Again, the first row of equivalent times gives us the ratio for any two distances. Thus, what time of exposure at 5 ft. is equivalent to 5 sec. at 2 ft.? First, we see that the *relative times* for 2 ft. and 5 ft. are 4 and 25 respectively, so we have only a rule of three sum to do. Thus:

"As 4 is to 25, so is 5 to the required time;"

$$\text{or } \frac{5 \times 25}{4} = 31\frac{1}{4} \text{ secs.}$$

TABLE III.

A TABLE showing how exposures at different distances from the illuminant may easily be compared (approximately)

Distance from illuminant (feet)............	1	$1\frac{1}{2}$	2	3	4	5
The horizontal rows of figures give equivalent exposures for the distance given in the top column.	1	$2\frac{1}{4}$	4	9	16	25
	$\frac{1}{2}$	1	$1\frac{3}{4}$	4	7	11
	$\frac{1}{4}$	$\frac{5}{8}$	1	$2\frac{1}{4}$	4	$6\frac{1}{4}$
	$\frac{1}{7}$	$\frac{1}{4}$	$\frac{1}{2}$	1	$1\frac{3}{4}$	$2\frac{3}{4}$
	$\frac{1}{16}$	$\frac{1}{7}$	$\frac{1}{4}$	$\frac{3}{5}$	1	$1\frac{1}{2}$
	$\frac{1}{25}$		$\frac{1}{6}$	$\frac{3}{8}$	$\frac{2}{3}$	1

The table may be used as follows:—We may be accustomed to make our exposures at 2 ft from the gas, but now wish to expose a very dense negative at 1 ft. from the gas, and want to know equivalent times for these distances. First find 2 ft. in the top row; then go down this column till you find the figure 1, *i. e.*, in the third row. Then look under 1 ft. and find $\frac{1}{4}$; that is, 1 sec. at 2 ft. is equivalent to $\frac{1}{4}$ sec. at 1 ft., or to $6\frac{1}{4}$ sec. at 5 ft.

The table is useful when comparing different brands of plates. For example, we know from experience that 20 sec. at 4 ft. with our favourite "Argentum" brand is about correct. We wish to try "Aurum" plates, and have no idea of their speed. But their instructions say, 3 sec. at 3 ft. is about right exposure. How does this compare with 20 sec. at 4 ft.? First, find the 3 ft. and 4 ft. columns. Then below we find that 1 sec. at 3 ft. is equivalent to $1\frac{3}{4}$ at 4 ft. Therefore, 3 sec. for the Aurum plate at 3 ft. is equivalent to 3 times $1\frac{3}{4}$, *i. e.*, $5\frac{1}{4}$ sec. at 4 ft. So, comparing this with 20 sec. at 4 ft. we conclude that the Aurum plate is nearly 4 times as fast as the Argentum plate.

It should be noted that the figures given are in many instances approximations. But they are sufficiently near for all ordinary purposes. Any one wishing for exactness can always find the fraction from the first row of equivalents. Thus, in the instance just quoted, when comparing 3 and 4 ft., the figures are, of course, 1 and $1\frac{5}{9}$, *i. e.*, 1 and $1\frac{7}{9}$; but the difference between $\frac{7}{9}$ and $\frac{3}{4}$ is only $\frac{1}{36}$, an error which may usually be neglected.—*The Amateur Photographer.*

* Allowance must be made for the colour as well as the density of the negative.

COMPETITIONS.

(Open only to Members of the Society.)

SUBJECTS FOR MONTHLY COMPETITIONS.

December ... ... Festivity.

RULES.

1. *Two Special Competitions shall be held, in each year, in addition to a monthly competition.*

2. *The Committee shall select the subjects for the Special Competitions, and notice of the selected subjects shall be announced in the Society's Journal in February and in July of each year. The subject for each monthly competition shall be selected two months in advance by the members present at the monthly meeting, and shall be notified in the next issue of the Society's Journal.*

3. *Pictures, &c., competing for Prizes at the Special Competitions must reach the Secretary by the last day of January and of May, and those competing at the monthly competitions must arrive in time to be shown at the monthly meeting.*

4. *Prizes will consist of Silver and of Bronze Medals, and of Certificates of Merit.*

5. *Not more than one Silver and one Bronze Medal shall be given at each Special Competition, and one Silver and one Bronze Medal may also be given at these competitions for excellence in copying, enlarging, lantern slides, or any other special branch of photography. One Silver and one Bronze Medal shall be awarded half-yearly to the exhibitors who obtain the highest and the next highest marks respectively at the monthly competitions. The number of Certificates of Merit granted at each competition is left to the discretion of the Judges.*

6. *A member may receive only one Silver and one Bronze Medal in the special, and one Silver and one Bronze Medal in the monthly, competitions, held during the same year; but should a member who has been adjudged a medal be disqualified under this rule from receiving it, he shall be given a Special Certificate instead, marked 1st or 2nd Prize.*

7. *A Special Committee of three members shall be appointed Judges by the General Committee to carry out, subject to these Rules, all arrangements connected with the competitions.*

8. *The Special Committee shall be appointed after the Annual General Meeting in January, and shall hold office for one year, and any vacancy occurring will be filled up by the General Committee.*

9. *The Special Committee shall decide upon the merits of the pictures, &c., sent in for competition, and their decision shall be final. The system of judging the monthly exhibits shall be by awarding marks, a record of which shall be kept by the Judges, the marks being totalled and the results declared half-yearly. For this purpose, only the three highest marks awarded at each competition to each competitor shall be recorded, but not the aggregate marks gained by each for a number of exhibits.*

10. *If any member of the Special Committee is a competitor, the General Committee shall appoint a non-competing member to act as Judge at that competition instead of the competing member.*

11. *No exhibit shall compete twice, but pictures, &c., already exhibited elsewhere, may be sent in for the competitions.*

12. *Lantern slides sent in for competition shall be in sets of six, and shall be judged upon the screen.*

13. *The Special Committee shall not award any Prizes or Certificates, unless they consider the exhibits to be worthy of such distinction.*

14. *Each competing exhibit shall be the entire work of the exhibitor, and when sent in shall be accompanied by a Certificate in the annexed form:—*

> *"The (1) Arranging, (2) Exposing, (3) Developing, (4) Retouching (if any), (5) Printing and (6) Trimming and Mounting were done by me without assistance."*
>
> ____________________
>
> *Member, A. P. Socy. of Madras.*

15. *All pictures for the Special Competitions shall be mounted, and may, at the competitor's option, be framed but not glazed. Those for the monthly competitions need not be mounted, but should be trimmed.*

16. *Each competing picture should have a name or title, which should indicate the nature of the subject.*

17. *No competitor shall be allowed to send in more than six pictures to compete for any particular Prize, but the same member may compete in all branches specified in Rule 5.*

18. *The pictures gaining 1st and 2nd Prizes at the half-yearly competitions, and the best pictures sent for the monthly competitions, shall, when practicable, be reproduced in the Society's Journal.*

19. *To give up-country members an opportunity of seeing the competing pictures at the special competitions, the pictures shall be circulated to all members of the Society, not residing in Madras, who apply to see them. As this arrangement can only be carried out by the cordial co-operation of the members themselves, they are expected to forward the pictures without delay to the next member, and to send one of the accompanying post-cards to the Secretary, so that by this means the progress of the pictures may be traced.*

List of Members whose Dark Rooms are available for use by Members of the Madras Amateur Photographic Society.

E. MAENNIG, Buckingham House, Tranquebar.

NOTICES.

Members of the Madras Amateur Photographic Society are permitted to use this column free of charge for two insertions of each advertisement—all subsequent insertions of the same being chargeable at 2 annas a line. When an advertisement becomes liable to this charge, it will not be inserted unless as postal order or stamps to the value of the charge are previously sent, addressed to Graves, Cookson and Co., Scottish Press, Broadway, Madras. Advertisements received up to the 5th of each month will be inserted in the next issue of the Journal; those received after this date will be held over for the subsequent issue.

Subscribers, and others who are not regular dealers may make use of this column for advertisements by paying at the rate of 3 annas a line.

Rates of Subscription, Payable in Advance.

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N.B.—The Journal is issued on the 15th of each month, and is posted free to members of the Madras Amateur Photographic Society.

Entrance Fee, Rs. 5.—Annual Subscription *for Resident Members, Rs. 15; for Up-country Members, Rs. 12. Members joining after 30th June pay Half-year's Subscription.*

Candidates for Election—*should be proposed by one member and seconded by another; and they will be ballotted for at the following meeting.*

Ordinary Meetings—*of the Society are held on the first Friday of each month at 6 p.m. and members are at liberty to introduce visitors: meetings take place at the Museum, Egmore.*

Letters to the Editor—*should be addressed care of Messrs. Graves, Cookson & Co., Scottish Press, Broadway, Madras.*

Letters to the Honorary Secretary—*should be addressed to Mrs. Leet Palk, Locock's Garden, Kilpauk, Madras.*

Letters to the Honorary Treasurer—*should be addressed to A. E. Lawson, Madras Mail Office, Madras.*

Communications regarding the issue of the Journal—*should be addressed to the Publishers, as above.*